HR-348 Recruiting and Retaining Women and Minorities for Public Sector Engineering Positions

Key Words: DOT Employment, Women, Minorities,

Phase One

The objective of phase one of this research was to assess the degree to which currently employed Iowa Department of Transportation (DOT) employees would be affected by a more aggressive policy to recruit and retain women and minority engineers. The DOT's *Future's Agenda* was used as a baseline to focus on efforts to update and implement a recruitment plan that would target underrepresented classes.

The primary question that emerged out of phase one was how could the Iowa DOT strengthen its ties with Iowa State University (ISU) to produce increased numbers of in state applicants for engineering positions. This introduced the objectives of phase two.

Phase Two

The objective of phase two of this research was to identify problem areas resulting in unacceptably high attrition rates for women, minorities, and to a lesser degree, Caucasian men in the College of Engineering at ISU, particularly Civil and Construction Engineering (CCE). Past research has focused on (1) projected shortages of qualified civil engineers, (2) the obstacles confronting women in a traditionally male oriented profession, and (3) minorities who are often unprepared to succeed in the rigors of an engineering curriculum because of a lack of academic preparedness. The researchers in this study, in contrast, chose to emphasize institutional reasons why women, minorities, and some Caucasian men often feel a sense of isolation in the engineering program.

It was found that one of the key obstacles to student retention is the lack of visibility of the civil engineering profession. The visibility problem led to the hypothesis that many engineering students do not have a clear conception of what the practice of civil engineering entails. It was found that this may be a better predictor of attrition than the stereotypical assumption that a majority of students leave their engineering programs because they are not academically able to compete.

Recommendations are offered to strengthen the ties between ISU’s Department of CCE and the Iowa DOT in order to counter the visibility issue. It was concluded that this is a vital step because over the next 5-15 years 40% of DOT engineers currently employed will be phasing into retirement. If the DOT expects to draw sufficient numbers of engineers from within the state of Iowa and if increasing numbers

of them are to be women and minorities, a university connection will help to produce the qualified applicants to fulfill this need.